

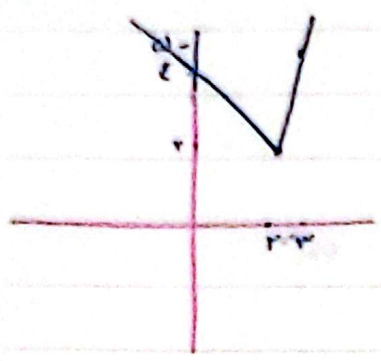
11, 25

سید علی

Date No

$$y = x + |rx - \epsilon|$$

(الف) 2

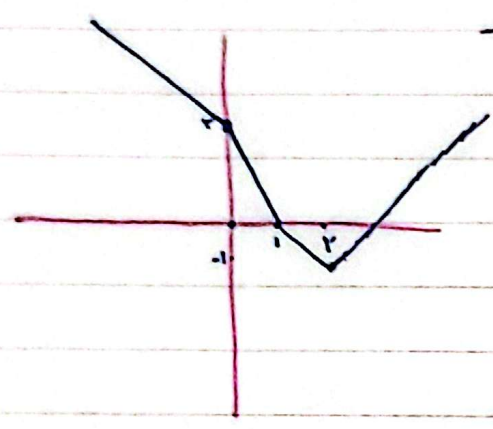


$$\frac{r}{\epsilon - x} \quad \downarrow \quad rx - \epsilon$$

$$R_f = [\frac{\epsilon}{r}, +\infty)$$

$$y = |x - r| + |x - 1| - |x|$$

(ب) 3

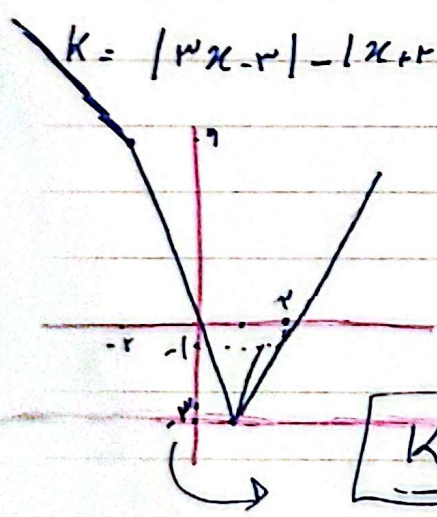


$$\frac{0}{rx - x} \quad \downarrow \quad rx - x \quad \downarrow \quad 1 - x \quad \downarrow \quad x - r$$

$$R_f = [-1, +\infty)$$

$$K = |rx - r| - |x + r|$$

(ج) 2



$$\frac{-r}{rx - r} \quad \downarrow \quad 1 - rx \quad \downarrow \quad rx - \omega$$

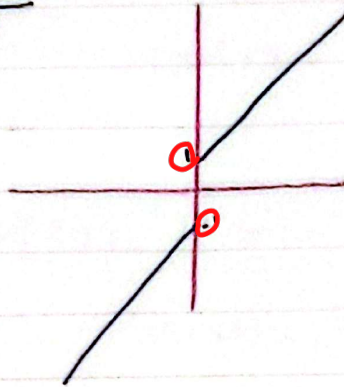
$$K = -r$$

$$y = x + \frac{x}{|x|}$$

$$\frac{0}{x-1} \quad x+1$$

۳- الف

(۱, ۵)

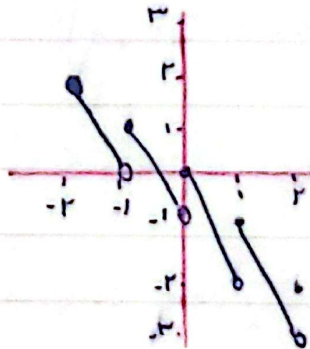
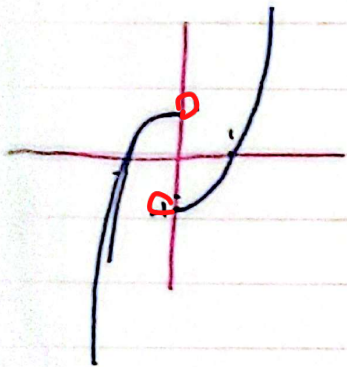


صفحه تعریف شده است

(ب)

$$y = x|x| - \frac{x}{|x|}$$

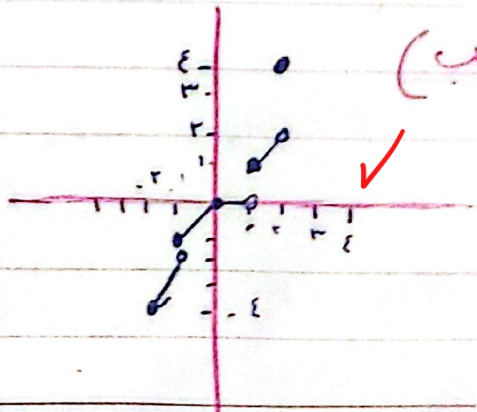
$$\frac{0}{x^2-1} \quad -x^2+1$$



۴- الف

(۱)

صفحه بندی ها رو حذف
بنویس

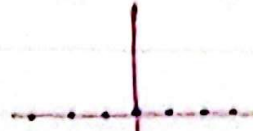


(ب)

dn

(1)

$$y = \sin x \in [-1, 1]$$



(2)

$$-1 \leq \sin x \leq 1$$

$$R_f = [-1, 1]$$

$$0 \leq \cos x \leq 1$$

$$y = \sin x - \cos x \in [-\sqrt{2}, \sqrt{2}] \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}]$$

$$y = \sin\left(\frac{x}{2}\right) \in \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$R_f = \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$\omega\left(\frac{x}{2} - \left[\frac{x}{2}\right]\right) \Rightarrow R_f = [0, \omega]$$

$$y = \cos x \in [-1, 1] \quad -1 < \cos x - \cos x \leq 0$$

$$R_f = [-1, 0]$$

$$-\sqrt{a^2 + b^2} \leq a \sin x + b \cos x \leq \sqrt{a^2 + b^2} \quad \text{4-الف (2)}$$

$$-\sqrt{9+16} \leq 3 \sin x + 4 \cos x \leq \sqrt{9+16} \Rightarrow R_f = [-5, 5]$$

$$-\sqrt{25} \leq 5 \sin x - 5 \cos x \leq \sqrt{25} \Rightarrow R_f = [-5, 5] \quad \text{ب (2)}$$

$$-\sqrt{29} \leq 2 \sin x + 5 \cos x \leq \sqrt{29} \Rightarrow R_f = \{-4, -\omega, -1, 2, -2, \omega, 1, 2, \omega, \omega\}$$

$$-\sqrt{5} \leq \cos x - \sin x \leq \sqrt{5} \Rightarrow R_f =$$

● dotnote

$$R_f = [0, \sqrt{5}]$$

$$y = \sin^r x + w \sin x + r$$

(أ) (ج) ✓

$$\sin x = 0 \Rightarrow y = 0 \quad \text{نبدأ بـ } \sin x \in [-1, 1] \text{ مع } \sin x = 0$$

$$\sin x = 1 \Rightarrow y = 4$$

$$\frac{b}{ra} = -\frac{w}{r} \Rightarrow \frac{q}{2} = -\frac{q}{2} + r = -\frac{1}{2}$$

$$R_f = [0, 4] \checkmark$$

$$y = r \sin^r x + w \sin x + r$$

(ب)

$$\sin x = -1 \Rightarrow y = 1$$

$$\sin x = 1 \Rightarrow y = 4$$

$$R_f = \left[\frac{1}{\lambda}, 4 \right] \checkmark$$

$$\frac{b}{ra} = -\frac{w}{r} \Rightarrow \frac{q}{\lambda} + -\frac{q}{2} + r = \frac{1}{\lambda}$$

$$y = \sin^r x + r \cos^r x = \sin^r x + \cos^r x + r \cos^r x = w \cos^r x + 1 \quad (أ) - \Lambda$$

$$y = 1 + w \cos^r x$$

$$y_{\min} = 1 \quad y_{\max} = 2$$

$$R_f = [1, 2] \checkmark$$

(أ) (ب)

$$y = \frac{r \cot x}{1 + \cot^r x} = \frac{r \cot x}{\frac{1}{\sin^r x}} = \frac{r \cot x}{\frac{1}{\sin^r x}} = r \sin x \cos x$$

$$\sin 2x \Rightarrow R_f = [-1, 1] \checkmark$$

(2) 9

$$-1 \leq \sin^2 + \cos^2 \leq 1 \Rightarrow R_f = \left[\frac{1}{\varepsilon}, 1\right] \checkmark$$

$$\left[\frac{1}{\lambda} \leq \sin^2 + \cos^2 \leq 1\right] \Rightarrow \begin{cases} 0 \\ 1 \end{cases} \quad R_f = \{0, 1\} \checkmark$$

$$y = \frac{(x+1)(x-1)}{(x+1)} = x-1$$

$$x \neq -1 \Rightarrow y \neq -1-1 = -2$$

$$R_f = \mathbb{R} - \{-2\} \checkmark$$

1. الف

(1, 5)

$$y = \frac{(x-1)(x^2+x+1)}{x-1} = x^2+x+1$$

$$D = \mathbb{R} - \{1\}$$

$$f_{(1)} = f_{(5)} = 3$$

$$x = \frac{-b}{2a} = \frac{-1}{2} \Rightarrow y_{min} = \frac{1}{4} - \frac{1}{4} + 1 = \frac{3}{4}$$

دالة هين 3 حذف عينه

$$R_f = \left[\frac{3}{4}, +\infty\right) \checkmark$$

دالة حتى بابه لحاظ شور

